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Contributions of Liberal Arts Colleges Toward the Educational Preparation of Dental Students

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CONTRIBUTIONS OF LIBERAL ARTS COLLEGES TOWARD THE EDUCATIONAL PREPARATION OF DENTAL STUDENTS

by

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LIFE

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From 1941 to 1945, he served in the United States Navy, during World War II.

In January of 1946, he re-entered Creighton University and graduated from the School of Dentistry in June, 1949, with the degree of Doctor of Dental Surgery.

From July, 1949, to September, 1956, he was in the private practice of dentistry at Harlan, Iowa. In September of 1956, he accepted a position of Assistant Professor of Pedodontics at Northwestern University, School of Dentistry, in Chicago, Illinois.

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PREFACE

The major thesis of this presentation is that a dentist needs to acquire a competent and liberal college education as well as a professional education. This is in no way inconsistent with the obvious need for a beginning student in dentistry to have a satisfactory preparation in science. This is a recognized and reasonable demand. The problem exists as to what qualifications he should have pre-professionally both in the scientific field and in the liberal arts field and also recognizes the need for continuing the broad liberal education con-comitantly with the professional studies.

In order to establish a philosophical rationale, Jacques Maritain's Thomistic views on education and especially on liberal education will be used. This will be compared and contrasted with present American Dental Association requirements and the actual college preparations that American dental schools do demand of applicants.

Very special thanks are due to Father Ray Walters, C.Ss.R., for his kindness and helpfulness; to Dr. John Wozniak, whose special assistance in planning my academic program was most judicious; and to my understanding and patient wife, who kept peace

and quiet in the house, and kept sticky little fingers off my desk during these past two years.

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CHAPTER I

INTRODUCTION

It is the purpose of this thesis to present broad functions and contributions which liberal arts colleges can and do make toward the preparation of dental students, rather than specific courses which relate to the dental student's professional study. This decision does not imply that the determination of specific courses for the pre-professional curriculum is of less importance than the broader contributions which pre-professional education might be expected to make to the dental student.

The tremendous developments in science and technology, which have taken place during the last decade or two, are highly interrelated with the changes that have occurred in the objectives and philosophy of colleges and universities. The rapid expansion of technology and science has spurred the development of highly specialized curricula in the universities. These curricula, in turn, have produced individuals who are educated for advanced technological exploration and achievement in the "scientific fields".

A similar development has occurred in the health profession

to the point where there has been real concern during the past several years as to whether it is possible for the dental student during the two years of pre-professional and four years of professional education, to acquire all of the scientific knowledge and skills necessary for practice. Discussants of this question almost invariably fall into two groups: one, supporting the belief that the solution to the problem may be found by providing the student with more scientific courses which he will need during his professional education; the other, adhering firmly to the belief that the professional student should have a broad background of study in the humanities before embarking on the highly technical and scientific curriculum of a school of dentistry.

Most of the statements and arguments regarding this question seem to be based upon the assumption that there is an antipathy between science and what are broadly called the social sciences and humanities. Undoubtedly, there is a marked difference between the content of scientific courses, such as chemistry and physics, and the social sciences, such as psychology and philosophy. Moreover, departmental organization and administration of the universities often unintentionally promote the notion that there is a vast and fundamental difference between the sciences and the humanities. It is suggested, however, that these may be

considered as simply two different parts of one vast field of learning, the purposes of which are to develop in the student the ability to use the scientific method. This ability, which is interpreted to mean the ability of the student to apply the principles of logic and reason to the solution of problems, can be considered to be one of the fundamental purposes of pre-professional education.

It will be assumed that the minimum college science courses now required for admission to dental schools are adequate. It might be expected that these courses would expose the student to the most basic facts and elementary laboratory techniques which will prepare him for dental school. However, because of the nature of the subject matter, much of the time which the college freshman and the sophomore student spends in physics, chemistry, biology, and English courses is devoted to the process of acquiring the tools. Little can be accomplished toward inculcating the higher educational ability of using these tools and applying them to the solution of problems. The student who has completed the minimal science courses required for admission to dental schools has not, unless he is of unusual ability, reached the point of familiarity with his tools so that he can use them to develop the all important concepts of scientific methodology.

Similarly, the college student who chooses his elective courses so as to acquire a broad cultural background may enroll in courses which cut across the humanities and social sciences with the impression that he is thereby storing up cultural knowledge which he may put to practical use during his future career. Each of these courses is, of necessity, an introduction to the field and provides the student with only the elementary facts and concepts. Perhaps it is possible to develop some appreciation and knowledge of the humanities and the social sciences in this way but it will be superficial in nature.

The student with a single course in sociology or philosophy is unlikely to develop a sufficient command of the facts and principles to permit him to undertake the solutions of problems in a scientific manner. If a sufficient command of the facts and principles is not accomplished, the cultural courses have failed to contribute to one of the most important educational experiences in the pre-professional curriculum, i.e. the ability to use the scientific method.

What is the answer to this situation, wherein the pre-professional student is exposed to a series of loosely related courses in which he is loaded with facts, figures and techniques? Should he devote more time to science courses so that he may develop the

insight and judgement in order to progress to the level of problem solving and independent judgement? Does it suggest that he take only the required science courses so that he will have an opportunity to study more of the social sciences and humanities?

The major thesis then of this presentation is that a dentist needs to acquire a competent and liberal college education as well as a professional education. This is in no way inconsistent with the obvious need for a student to have a satisfactory preparation in science. This is a recognized and reasonable demand. The problem exists as to what qualifications he should have pre-professionally both in the scientific field and in the liberal arts field to be a good doctor. And hence, the need for continuing the broad liberal education concomitantly with the professional studies in order to establish a philosophical rationale. Jacques Maritains' Thomastic views on education, especially liberal education, will be used to clarify this point. This will be compared and contrasted with present American Dental Association requirements and the actual college preparation that American Dental Schools do demand of applicants.

CHAPTER II

HISTORY

A brief review of two fundamental points of philosophy that are basic to a philosophy of education is necessary in order to defend the premise that a sound and competent liberal arts education is necessary for a dentist; and that the present basic requirements as listed by the American Dental Association for entrance to the professional college inadequately provide this. It is necessary to do this because a philosophy of education is constituted by a set of problems which can be solved only in the prior field of philosophy itself. It is these problems which are the philosophical problems of education.

One of the functions of a philosophy of education is to supply guiding principles and directive knowledge about the aims of education. Discoursers of this question in the field of dentistry fall into two groups: those who believe that education is a means of producing intelligent cultured men of character who become exemplary citizens, socially responsive and morally good, working for the ultimate purpose of attaining spiritual sanctification through the profession by the acquisition of a sound and

competent liberal arts education, and those who feel that the educational aim of dentistry is limited to material ends and worldly efficiency through the acquisition of additional scientific courses.

The ultimate problems of education are practical and the "liberal education" philosophy is not at all at odds with science or the scientific emphasis because the philosophy of a sound liberal arts education contains both theoretical and practical knowledge, whereas science contains only theoretical knowledge, i.e., it cannot investigate the good. Yet every practical problem involves the good since there is always a free choice between a better of less acceptable alternative.

Hence, the two points that should be understood are:

1. Man naturally knows some truths
2. Universal skepticism is impossible

Man naturally knows some truths. By "naturally" is meant that he knows them without reasoning and without a teacher; some things are so necessarily known that it is an entirely natural process. Among such truths would be included, for example, the fact of one's own existence.

Secondly, and a corrollary of the first point, universal skepticism is impossible. By skepticism is meant suspension of

judgment or doubt. This can be universal, in which there is doubt about everything; or particular, in which there is doubt about some particular fact or a certain line of truth. Also, it can be objective, in which there is doubt about everything except self; or subjective, in which there is even doubt about self.

Now skepticism as a fact is physically impossible because you cannot suspend judgment about certain things in life--the principle of contradiction, hunger, etc.. It amounts to this--to be a skeptic you could never act because you would never know which way to go with any certainty. In addition, skepticism, as a doctrine, is self contradictory. A skeptic would claim to doubt everything, and yet he is certain that he doubts. Then again, he is not assured of doubt but probable; and hence, certain of probability. Therefore, to be logical and reasonable, a skeptic should never say anything. Also, he implies the certainty of existence because if he didn't exist he could not doubt. It is a doctrine, freely asserted, without proof.

Hence, since skepticism is impossible, therefore, some certainty or truth is possible.

It is necessary to establish these truths since the problem that underlies the confusion in education and dental education is specifically, and to use words long out of favor in pedagogical

circles, a matter of philosophy. It reverts back to Dewey and his disciples, who revolted against these certitudes. Instead of modernizing the teaching methods, they seem to have gone deeper and denied tradition in anything. They generally contended that the traditional ends of education and, indeed, of human life, such as God, virtue, and the idea of "culture", were debatable and, hence, not worth debating. This is the philosophy of experimentalism, and "experimentalism is synonymous with the educational philosophy of John Dewey and which is the basis for the pragmatic methods of modern progressive education."[1]

According to the philosophy of experimentalism, the term "science" means a critical, experimental procedure, wherein knowledge is accepted as truth only when it is the outcome of experience and has been tested by experience. Science, then, is viewed as the very experimental method itself, or its tested and accepted thought products.

A few pertinent questions are significant at this point. Is it not true that many of our college graduates are frequently limited in general knowledge of the cultural fields if they were

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[1]John D. Redden, and Francis A. Ryan, A Catholic Philosophy of Education (Milwaukee, 1956), p. 471.

science majors? Where is there time, short of a four-year college program, for a student who is majoring in science to pursue meaningful courses in philosophy, logic, literature, history, and the like? When thirty to thirty-six hours of science are prescribed in a two-year pre-dental program, where is there an opportunity to squeeze in anything significant in the realm of the arts course?

For example, let us review the following suggested program at a Midwestern School of Dentistry, which is typical throughout the United States:

REQUIRED SUBJECTS - First College Year

English - one academic year of two semesters or three quarters. Most colleges grant 6 semester-hours or 9 quarter-hours for the full year course. Ten quarter-hours of credit earned in two quarters will meet the minimum requirement, but the complete course is recommended.

General Chemistry - one academic year with not less than 8 semester-hours or 12 quarter-hours of credit, including laboratory work.

Zoology or general biological science with laboratory - one academic year of two semesters or three quarters. Botany will not be accepted as part of this requirement except when it is an integral part of a general biological science course. The actual credit required will vary from 6 to 10 semester-hours or from 9 to 15 quarter-hours, depending upon the way the course is presented at each individual college. Two quarters of study will not meet the minimum re-

quirement if less than 12 quarter-hours of credit are earned.

REQUIRED SUBJECTS - Second College Year

Organic Chemistry with laboratory - at least 4 semester-hours or 6 quarter hours of credit and preferably more. Basic work in both the aliphatic and aromatic compounds must be included.

Physics with laboratory - one academic year of two semesters or three quarters. The actual credit will vary from 6 to 10 semester-hours or from 9 to 15 quarter-hours, depending upon the way the course is presented at each college. Two quarters of a three-quarter basic course will not be accepted.

ELECTIVES: In addition to basic preparation in the sciences, it is recommended that the student obtain a well-rounded general education. He is encouraged to choose his electives according to his own interest and needs. By planning his pre-dental program carefully in advance, the student may equip himself with a basic liberal education while he prepares himself also for the medical sciences. For those who desire suggestions, the following electives are considered to be especially appropriate:

Economics	Comparative Vertebrate Anatomy
Psychology	History and Political Science
Sociology	Mathematics (if it is a prerequisite for Physics in college)
Speech	Embryology[2]

[2]Northwestern University Bulletin, The Dental School Admission Requirements (Chicago, 1958-59), p. 20.

Does not this suggested program crowd out practically all possibility for study of the humanities? Even in the suggested elective courses, the only two courses listed that have a minimum amount of liberal arts education are psychology and sociology. The entire emphasis is on the science courses, which suggests an action philosophy of education--practical and not primarily speculative, maintaining that action is true only in terms of its consequences and the measure of truth is utility.

Does the dental student have less need for the foundation of a liberal education than does the prospective teacher, minister, accountant, social scientist, attorney, or any other person seeking a learned career? Is not the dental student to be denied by dental educators when the two pre-dental years are surfeited with science courses as criteria for admission to the study of dentistry? How can a pre-dental student be exposed to the refining processes of the liberal arts curriculum, when pre-dental requirements minimize the importance of the last two years of college work? What has been overlooked in laying the groundwork that so many in the professions--and not necessarily just dentistry--mistake prosperity alone for success? Can it be this utilitarian and pragmatic emphasis in our teaching methods, with its insistence on definite numbers of requirements and operations,

lends to the transfer of monetary remuneration prior to services rendered upon graduation and entrance into private practice? It has been said many times that people in the healing arts are much more concerned about making a living than making a life.

It is realized that to demand a Bachelor's Degree of every prospective dental student may sound utopian and devoid of facing up to practical consideration. Perhaps it is idealistic, but it is also basic. It is the least toward which the dental profession may aim if its success and stature are to prove anything more than mediocre. If the objectives of the educational program for dentistry are those of halfway exposure to the cultural fields, half-cultured products might logically be expected. It seems unlikely that standards and ideals could reduce the enrollment in the dental schools, in fact, the reverse will surely prove true. Those who have observed the results of the improvement in admission requirements for dentistry during the past half century must bear testimony to this.

Today, twenty years after the two pre-professional and the four professional year plan was put into effect, the enrollment in dental schools is greater than it ever has been. Moreover, it is interesting to note that the students feel the need for a broader educational preparation by acquiring college degrees be-

fore applying for admission to dentistry, although they know that a minimum of two years of college education is generally accepted for entrance, as is evidenced from the following table which shows the number of undergraduates enrolled in dental schools in the United States and the amount of pre-dental training they had, as of October, 1956.

TABLE I

PRE-DENTAL COLLEGE TRAINING
OF UNDERGRADUATES[a]

Schools or Colleges Total Number 45	All Undergraduates			
	Two Years	Three Years	Four Years With Degree	Degree
Number of Students	3085	3674	700	5263
Percent	24%	28%	5%	41%

[a]Dental Students Register, 1956-57

Could this self-imposed raising of standards by 41% of the students be considered an indictment of the lower standards of preliminary requirements that have been set?

Dr. Leroy M. L. Miner, former dean of Harvard University Dental School, in an address to the American Association of Dental Schools said in part:

The topic of this discussion is one of the most

important that we could take up. It involves quite definitely the intellectual position of the dental profession.

On the side of its technical and remedial activities, dentistry has little need to fear even the most searching criticism. It has long held the admiration of the world for its craftsmanship. It has developed fine and delicate techniques, and American dentistry has easily taken the front rank in the world in its mechanical skill and handicraft. On that level it has no rivals, but is secure in its superiority. But when it is regarded from the intellectual point of view, its position is neither so secure nor satisfactory. If it is going to command a place of equality with the other divisions of the medical profession--and none of us should be satisfied with anything less--I think we must admit that it will need to strengthen its intellectual foundations.

No one can review with a critical eye the history of the dental profession without realizing that its intellectual attainments leave much to be desired. When we seek in that history for men of high scholarship, broad grasp of medical science, leadership in the art of healing, the results of our inquiry must leave us somewhat discontented.[3]

At the same meeting, Dr. Michael M. Davis, then Director for Medical Service, Julius Rosenwald Fund, stated in an address:

but I beg to submit that the dentist is a practitioner as well as a technician; that he and his profession must practice in society as well as upon it; and that

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[3]Leroy M. S. Miner, "Pre-Dental Education", American Association of Dental Schools, (March 1953), 12, 89.

> in preparation for a professional career in society he should be educated as well as informed.[4]

During the intervening years the profession has sought and nurtured a great many individuals who can answer admirably to the foregoing criteria. Many shining examples of culture, scientific knowledge, and consummate skill stand out through the history of the dental profession. Many thousands of dentists are capable practitioners who render a competent oral health service and answer admirably to the demands of culture, refinement, and integrity in their relationships. Fewer, perhaps, possess all of those fine attributes, together with the basic educational foundation essential to engage in graduate education by which they might make more creative contributions to knowledge. Fewer still can accept without qualification the badge of being generally learned, particularly if the yardstick is the acquisition of a liberal education in preparation for the study of dentistry.

Dentistry, through its leaders and friends, has every reason to take pride in its phenomenal educational developments during the past sixty years. In 1897, through the action of the National Association of Dental Faculties, the requirements for admission

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[4]Michael M. Davis, "The Social Outlook", American Association of Dental Schools, (March 1953), 12, 88.

to dental schools were raised to the equivalent for admission to a high school. In 1910 graduation from a high school was required, and in 1917 one had to be a graduate from a four-year high school in order to qualify for entrance into dental school.[5]

Twenty years later, the requirements for admission were set at a minimum of two full years of college work including specific basic sciences. This had been a great achievement for the profession. It does not, however, represent all of the individual and institutional advances which have raised the requirements in some schools to a position well above this level. Nevertheless, we cannot be satisfied with the achievement of the profession as it exists today. Progress indicates that dentistry, like other learned professions, is serious concerning the establishment of a firmer foundation upon which to further its advancement and contribution to society through the healing arts.

It is, perhaps, necessary to emphasize that there is no magic in Bachelor's Degrees, as such. It is possible, and not infrequent, for one to possess a Bachelor's Degree and still be far from being liberally educated. It must be apparent, on the

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[5]Curriculum Survey Committee, American Association of Dental Schools, A Course of Study in Dentistry (Chicago, 1935), p. 360.

other hand, that the baccalaureate degree from universities of the United States is still the most useful index for the assessment of a basic and broad preparation for a professional education and for life.

Considering the baccalaureate degree from this standpoint, it may be interesting to note how far the dental schools have gone since 1937 in achieving a fuller college pre-dental preparation. From 1937 through 1956, the baccalaureate status of graduates of dental schools of the United States is illustrated by the following table.[b]

TABLE II

PERCENTAGE OF GRADUATES OF DENTAL SCHOOLS IN THE UNITED STATES FROM 1937 THROUGH 1956 HAVING BACHELOR'S DEGREE TO DENTAL SCHOOL PRIOR TO ADMISSION

Year	Percentage of Graduates	Year	Percentage of Graduates
1937	20	1947	27
1938	22	1948	24
1939	22	1949	32
1940	25	1950	33
1941	32	1951	23
1942	29	1952	24
1943	29	1953	36
1944	29	1954	44
1945	28	1955	47
1946	26	1956	45

[b]The American Dental Association, Council on Dental Education, Dental Students Register, (1943-1956-57) Table V.

Table II shows that there has been a steady and substantial

growth in the baccalaureate status of dental graduates in spite of the large fluctuations resulting from World War II and the Korean Conflict, together with the shadows of Selective Service and endless rumors of war. While progress in attracting college graduates to dentistry has been slow, its pace, nevertheless, has been creditable, definitely, and promising in face of the fact that the last generation of young men has been at war for a large portion of their lives. In spite of the healthy growth in the baccalaureate status of dental graduates, the foregoing statistics reveal that no more than one-third of those who graduated from dental schools during the past twenty years began their studies with the benefit of college degrees. It might be assumed that most of the other graduates had only about one-half or two-thirds of what the regular college curriculum offered in the way of "preparation for life".

How favorably do dentists compare with other capable and privileged citizens in contributing to the multitude of progressive activities and civic enterprises designed to make a better community or a better world? If, in the final analysis, our real concern is laying the ground-work for more perfect living, the emphasis on preparation for life must begin before the prospective dental student is subjected to the narrowing influence of

professional education. He must be inspired through his learning to a social consciousness which will carry over into his maturity.

The Report of the Subcommittee on Pre-professional Education of the Survey of Medical Education was published in 1953, under the title "Preparation for Medical Education in the Liberal Arts College". It emphasizes the necessity of a sound liberal education as a basis for admission to medical school. Much of its content might be applied advantageously to dental education. With no attempt to paraphrase the philosophy that embraces the recommendations at the end of each chapter, I will quote from several of them.

Chapter on "The Pre-medical Student", states:

> That no person should be denied the opportunity to fit himself for the profession of medicine because of color, creed, national origin, or socio-economic status.
>
> That special curricula for pre-medical students, special course sections, or special treatment for them within a course should be avoided whenever possible, and that every student, irrespective of what he intends to do vocationally, should think of himself as a liberal arts student in search of a well-rounded education and should be treated as such.[7]

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[7] Ava E. Severinghaus, Harry J. Carman, and William E. Cadbury, Jr., Preparation for Medical Education in the Liberal Arts College (New York, Toronto, London, 1953), pp. 20.

In the chapter headed "A Balanced Education":

> That medical schools should strongly urge students to secure a broad liberal education.
>
> That distribution requirements should be retained and, where necessary, strengthened. The distribution requirement obligates every college to create and maintain courses that should fulfill its purpose as to content and outlook as well as quality of teaching and the rigor of standards. It is further recommended that the educational program of all students should include work in courses offered at a mature level in the biological and physical sciences, the social studies, and the humanities.
>
> That liberal education should be extended both into pre-college work and into the medical school. This is partly a problem of teaching personnel and methods and partly a matter of curricular change and emphasis.[8]

In the chapter "Majors and the Culminating Year", the authors state:

> That every student's program should provide for the development of his intellectual capacity along at least one line toward a high level of maturity.
>
> That colleges should take steps to make sure that the final year before the award of the bachelor's degree is a truly culminating year.
>
> That the major should promote an increasingly mature mastery of a field of knowledge, and not be merely a patchwork of more or less related courses.
>
> That the practice of granting a bachelor's degree

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[8] Ibid., 83.

> to students who have substituted work in a medical school for this potentially culminating year should be abandoned.[9]

And from the chapter called "The Several Disciplines":

> That courses in the sciences which are taken by pre-medical students should emphasize principles and modern points of view.
>
> That colleges should not permit pressure from self-appointed accrediting agencies to influence their educational policies.
>
> That every department (and this applies especially to chemistry) should keep its major requirements low enough so that students with an interest in the subject are not discouraged from majoring in it, even if they do not intend to use it directly in a job or in graduate school.
>
> That each student should be encouraged to reach a relatively advanced level in one or two subjects outside his major field.[10]

These recommendations indicate that the background of a competent liberal college education is a necessity for prospective medical students in the pursuit of higher standards in medicine. Dentistry can wisely seek no less.

As we have contended above, the pre-dental program, as it now exists, inadvertently seems to be the victim of pragmatism by its insufficiency at the basic liberal education level.

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[9] Ibid., 152-153.

[10] Ibid., 127-128.

Especially does this seem to be the fact when viewed in the light of Thomist outlook on liberal education. As Maritain says:

> The primary aim of education in the broadest sense of this word is to form a man, or rather to help a child of man attain his full formation or his completeness as a man. The other aims, to convey the heritage of culture, to prepare for life in society and good citizenship, for making a living, are corollaries and essential but secondary aims.[11]

The secondary purposes or corollaries, proposed and promulgated by the American Dental Association standards, stress sciences as the primary ends of the education of a dentist. This tends to the philosophy of pragmatism which insists on making education and instruction "useful", and it asks what is the real worth in the market of the article called "A Liberal Education" on the supposition that it does not teach the student definitely how to be a better dentist.

The confusion exists primarily, therefore, in the aims of education. By its lack of insistence on a complete liberal education before professional training, the basic requirements of the American Dental Association for admittance to the Dental

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[11] Jacques Maritain, "Thomist Views on Education", Modern Philosophies and Education, 54th Yearbook of The National Society for the Study of Education, p. 62.

College gives credence to the misconceived idea of what a successful dentist ought to be to the burgeoning and immature undergraduate. The utilitarian philosophy of how well he can master formulas, techniques of certain operations, the origin and insertion of certain muscles, and the synapses of nerve centers is held up as a criterion of how successful this student will be upon graduation. However, little thought is given to the fact of the basic "why" of all these procedures. In the seemingly frantic rush to overcome the statistics predicted for 1967, "that in order to maintain the existing population-dentist ratio of 1 to 1,886, the schools would have to graduate six thousand more dentists than they are likely to do, the standards as they now stand reflect no more egregious case of 'throwing out the baby with the bath'."[12]

The Thomist view on the aims of education is expressed most precisely by Maritain in his book Education at the Crossroads. Concerning these aims, he says,

> it is to guide man in the evolving dynamism through which he shapes himself as a human person--armed with knowledge, strength of judgment, and moral virtues--while at the same time conveying to him the spiritual

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[12]M. H. Moen, Dental Times, American Dental Association (April, 1957)

> heritage of the nation and the civilization in which he is involved, and preserving in this way the century old achievements of generations. The utilitarian aspect of education--which enables the youth to get a job and make a living--must surely not be disregarded, for the children of man are not made for aristocratic leisure. But this practical aim is best provided by the general human capacities developed. And the ulterior specialized training which may be required must never imperil the essential aim of education.[13]

Now it seems that in order to get a complete idea of the aim of education, it is necessary to take into close consideration the whole human person. This would seem to be a most necessary consideration in the education of a dentist who is vitally concerned with the whole human person, and yet which is seemingly denied him by substandard admission requirements.

In a treatise such as this, it is neither possible nor necessary to give the entire philosophical doctrine on potency and act, on matter and form, and on the union of the body and soul. Some previous knowledge of such doctrine is, however, a prerequisite for a proper understanding of the Thomist views on the necessity of a basic liberal education for all.

The following points are considered most important and are

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[13]Jacques Maritain, Education at the Crossroads (New Haven), p. 10.

outlined more at length by Cavanagh and McGoldrick in their book Fundamental Psychiatry:

1. Living and non-living things differ radically in that living beings have immanent action which is displayed in growth, repair, reproduction, and intrinsic finality.

2. Man lives and has a body and soul. The soul or vital principle of man is simple, substantial, spiritual, immortal, and one.

3. Man has cognitive powers which give him both sense and rational knowledge, as well as an appetitive power with both sensory and rational tendencies. Under certain conditions, the rational will enjoy freedom and is able under such circumstances to exercise choice.

4. Because of the substantial union of soul and body, man is a perfect unit and all activity must be attributed to the whole man thus composed by the substantial union of soul and body.[14]

These are fundamental philosophical principles that every member, trusted with the health of his fellow man, as is the dentist, should be imbued. Without these basic truths it seems unlikely that any Doctor of Dental Surgery will reach the high goal of his profession because he will fail to realize the dignity of the person on whom and for whom he works. His motive

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[14] J. R. Cavanagh and J. B. McGoldrick, Fundamental Psychiatry (Milwaukee, 1954), p. 175-176.

force degenerates into a pecuniary reimbursement--the health of the person becomes secondary, personal honor becomes his goal as each patient becomes a more interesting specimen on his ascent to scientific glory. Then, again, with his methodical, technologically trained mind, he beautifully restores the oral health of his patient, but he is unable to fathom why it relapses, never realizing that an emotional state may be the directly responsible cause for dental disease, and that psychological factors may be responsible for poor oral hygiene which in turn leads to disease.

But where, again it is asked, can this basic knowledge be acquired in a two-year course of sixty semester hours with thirty to thirty six of those hours in prescribed science. How is the student to squeeze in anything significant and so necessary as philosophy and psychology.

As Maritain so aptly says,

> in a social order fitted to the common dignity of man, college education should be given to all, so as to complete the preparation of the youth before he enters into the state of manhood. To introduce specialization in this sphere is to do violence to the world of youth. As a matter of fact, a young man will choose his speciality for himself, and progress all the more rapidly and perfectly in vocational, scientific, or technical training in proportion as his education has been liberal and universal. Youth has a right to education in the liberal arts, in order to be prepared for human

work and human leisure. But such education is killed by premature specialization.[15]

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[15]Maritain, Education at the Crossroads, p. 64.

CHAPTER III

The analysis of any undergraduate program has its genesis in the desire to answer certain questions:

1 Is there a clear understanding by students, alumni, and faculty of the general "mission" of the College?

2 How clear and complete is faculty-awareness of the whole program?

3 Does faculty-awareness of objectives extend to important attitudes as well as to the usually accepted knowledge and skills?

4 Do graduates actually possess the kind of attitudes, knowledge and skills which the faculty officially endorses as its objectives?

5 Is the curriculum set up properly to achieve these objectives? Is whatever discontent that exists based upon the curriculum itself or on "teaching"?

6 If, as is generally admitted, the curriculum has just "grown like Topsy" over the years, has it grown logically? psychologically? and philosophically?

7 What kinds of administrative machinery are necessary for promoting continuous study of the curriculum?

8 How can a faculty tell that it is doing an effective job of instruction?

Few schools have taken time or have the courage to open their closet doors in search of curricular skeletons. Glossing

over deficiencies and dismissing them with rationalizations ("there isn't enough time"; "dentists are poor teachers"; etc.) are really much easier solutions.

To answer these questions adequately it might be wise to develop a long-range curriculum study program wherein faculty, students, and alumni could join forces in a truly professional and democratic manner. Thus, objectivity and wider perspective would contribute to a more fundamental analysis of the program.

Let us take a look at the Dental School and its relationship to the University. Dentistry has only recently been accepted as a profession rather than a craft. What are the qualities which distinguish a profession? Morris L. Cogan[16] in his article "Toward a Definition of Profession" offers the following:

> A profession is a vocation whose practice is founded upon an understanding of the theoretical structure of some department of learning or science, and upon the abilities accompanying such understanding. This understanding and these abilities are applied to the vital practical affair of man. The practices of the profession are modified by knowledge of a generalized nature and by the accumulated wisdom and experience of mankind, which serve to correct the errors of specialism. The profession, serving the vital needs of man, considers its first ethical imperative to be altruistic service to the client.[16]

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[16]Morris L. Cogan, "Toward a Definition of Profession" Harvard Educational Review, XXiii, (Winter, 1953). p.48-49.

Certainly the specialized knowledge required of a dentist, the skill of a high order, the experience, judgement, ethical principles and a deep sense of responsibility all contribute to the fulfillment of this definition.

Indeed then, the profession of dentistry can be defined as a group of individuals highly educated in a particular field, who have joined together under a code of ethics designed to safeguard the public welfare. Because such groups have developed an ethical code, society grants them special privileges. In exchange the profession takes the responsibility for maintaining discipline within its group.

But apart from a high code of ethics, which should mean that a professional man makes decisions without regard to self-interest he must also be a person of very high ability. He must have great knowledge and curiosity; he must have the artistic sense to marshal basic principles to apply to the problems before him with imagination and skill. Perhaps, above all, he needs the ability to make logical connections and see relationships where the less-informed would fail to grasp them.

No one knows exactly what proportion of the population possesses such abilities. We do know that the proportion is not large. We also know that we can discover who has high ability

more easily than who has high ethics. Fortunately, there seems to be a linkage between the two, or at least we can say that those with high ability understand more readily the need for high ethics.

However that may be, it seems that a profession as important as dentistry should make a strong effort to attract to itself the highest type of recruit. Unfortunately, such an effort has not been made in the past, nor has the average academic standing of entering dental students been as high as we should like.

Concretely, we should like to see the average score of entering dental students moved up by a quintile from where it is. Presently, the average for academic aptitude on national measuring instruments for students entering dental schools ranges from the 60th to the 65th percentile.[17] We should like to see this average moved up to a range between the 80th and 85th percentile.

However, certain observations should be made. Although the entering student has usually taken the science courses which will help him in his work, he may not have the broad general courses in the social studies and the humanities which would enlarge his

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[17]B. S. Hollinghead, The Journal of the American Dental Association, 59, Sept. 1959, 497.

horizons and help him to become a more useful citizen. President Millis[18] of Western Reserve University has recently written on Educating Teachers as Professionals, and since what he has to say is equally applicable to educating dentists, I shall quote him at some length. After stating that the first requirement of those who practice a learned profession is a "well furnished mind", and that "technical competence is wholly dependent on intellectual competence", President Millis goes on to say:

> The one skill which is basic to the practice of all learned professions is judgement. Professional skills are of no use until human judgement has been exercised. Unfortunately, judgement is something which cannot be taught as a specific skill. Rather it is the distillation of knowledge and experience, a capacity which is drawn out of the total knowledge of the individual, a quality which has to be generated from within the individual.[18]

Teachers who have self-respect, respect for their students, and for the subject which they profess will attract disciples who in turn will respect their teachers and their profession. Discipline has come to have a connotation of unthinking submission to hard rules of conduct. The root meaning of disciple is a learner who respects his teacher and wishes to emulate him. We have such

[18] E. Millis, Educating Teachers as Professionals, Fourteenth Congress on Dental Education and Licensure, June 1953.

teachers, but there are all too few of them.

In view of increasing complexity and knowledge, it is advisable that dentists be more broadly trained than they have been in the past. Competence in a broad area is a difficult goal in this era of rapidly accumulating knowledge. Specialization in dentistry is spreading rapidly and it seems as though the only general practitioner in a school of dentistry is the senior student dentist. A balance between special competence in the diagnosis and treatment of diseases of the mouth, wider competence in the sciences and humanities and the still broader education characteristic of a learned profession offers a challenge indeed. An apparently easy and logical solution is to acquire the broad education first and the special competence later. Require a bachelors' degree before entering upon the study of a profession. Concentrate on the humanities and leave the study of the sciences and their applications to dentistry for the "period of maturity", as they say. Dental education following in the footsteps of medical education has already lengthened the post high school period to a minimum of six years. The present first year class averages 24 years of age.[19]

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[19]American Dental Association, Dental Students Register (1956-57)

Many of these men will go on to specialize in orthodontics, oral surgery, or other fields of dentistry. They will be well along in their thirties before entering practice.

There are several fallacies in this approach to education for a profession. The first and most basic fallacy is that one can ever become "educated". The second is that a four year college course culminating in a bachelor's degree is the only sound foundation for a professional education. The third is that the acquiring of skills can be advantageously postponed to the years of maturity.

Factors in overcompensating and over-valuing what we ourselves have lacked play an important role. The dentist who went to dental school directly from high school and who has been successful in practice may be conscious of his own cultural deficiencies. So, also, the business man and the engineer. They tend to devalue their own accomplishments and the importance of their early contact with reality situations. Their sons, with the advantages of wealth and education, are fortunate indeed if they resolve the conflict. An inquiring mind and a basic intellectual curiosity can hardly be satisfied by a lifetime of adult education. This is a cultural smorgasbord, an intellectual feast to which we are all invited. The resources of our libraries,

museums and universities are rich but too often early and unpleasant experiences with sadistic teachers or forced learning negatively condition us for further enjoyment.

The present system of education has made great progress, but it also introduced mass production, lock step promotion, postponement of contact of the student with the patient, bench work ahead of human relationship, and isolationship. Isolationism has been a characteristic of professional education in America for years. We have adopted the administrative device of a separate school with its own separate faculty, with its own classrooms, laboratories and library. We have permitted the growth of departments duplicating the areas covered by other departments within the same institution. This has lead to specialized courses so that even general education has become special education. General learning can only flourish in an environment where learning is accomplished for its own sake and not as an adjunct of questioned value, shaped toward the end of professional skill. Plans to eradicate barriers between departments and barriers between professional faculties and the other teachers of our universities show some hope that the tide of isolationism is beginning to turn. The task of making people learned is so great and so complex that it can be achieved only through the exploitation of all the re-

sources of a university.

The greatest isolation, however, is at the faculty level. We have let the necessity for specialization drive us into departments, faculties, schools, and colleges, so that we deal with our colleagues at arm's length and seldom with intimacy and understanding. We can combat this isolation by first recognizing that our own education is never complete, and that we too are learners. Dentistry, perhaps more than any other learned profession which can properly be taught in a university, has suffered from isolationism and narrow specialization.

What are some possible remedies to correct this situation?

First, both students and faculty must join the university. We must contribute to and gain from the main stream of learning. We must become more a part of the whole university, and therefore of the community. We have no right to identify ourselves as students and faculty members of a great university unless we are willing to strive constantly to maintain the level of academic achievement and integrity of scholarship and research which has earned the university its pre-eminent position. Even with this attainment, we cannot relax, for among universities the status quo soon means that we lag behind. To be outstanding in the technique of our speciality, as important as it is, is not enough.

Training and education are not synonomous.

Specifically, a plan should be formulated to enrich our educational experience by developing an experimental six-year integrated program in cooperation with the undergraduate colleges of the university, incorporating more of the humanities throughout the six-year program, rather than isolating the student by the two-year requirements of basic sciences and "electives" in the humanities before admission to the four year autonomy of the professional studies in the dental school.

John Cardinal Newman in his treatise On the Scope and Nature of a University discusses this at some length, and what he says of Law and Medicine, also applies to Dentistry. He explains:

> In saying that Law or Medicine is not the end of a University course, I do not mean to imply that the University does not teach Law or Medicine. What indeed can it teach at all, if it does not teach something particular? It teaches "all" knowledge by teaching "all branches" of knowledge, and in no other way. I do but say that there will be this distinction as regards a Professor of Law, or of Medicine, in a University and out of it, that out of a University he is in danger of being absorbed and narrowed by his pursuit, and of giving lectures which are the lectures of nothing more than a lawyer or a physician; whereas in a University he will just know where he and science stand, he has come to it, as it were from a height, he has taken a survey of all knowledge, he is kept from extravagance by the very rivalry of other studies, he has gained from them a special illumination and largeness of mind

and freedom and self-possession, and he treats his own in consequence with a philosophy and a resource, which belongs not to the study itself, but to his liberal education.

This then is how I should solve the fallacy, for so I might call it, by which Locke and his disciples, would frighten us from cultivating the intellect, under the notion that no education is useful which does not teach us some temporal calling, or some mechanical art, or physical secret. I say that a cultivated intellect, because it is good in itself, brings with it a power and a grace to every work and occupation which it undertakes, and enables us to be more useful and to a greater number. There is a duty we owe to human society as such, to the state to which we belong, to the sphere in which we move, to the individuals toward whom we are variously related, and whom we successively encounter in life, and that philosophical or liberal education, as I have called it, which is the proper function of a University, if it refuses the foremost place to professional interests, does but postpone them to the formation of the citizen and while it subserves the larger interests of philanthropy, prepares also for the successful prosecution of those merely personal objects which at first sight it seems to disparage.

Society itself requires some other contribution from each individual, besides the particular duties of his profession. And, if no such liberal intercourse be established it is the common failing of human nature to be engrossed with petty views and interests, and to underrate the importance of all in which we are not concerned, and to carry our partial notions into cases where they are inapplicable, to act, in short, as so many unconnected units, displacing and repelling one another.[20]

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[20]John Henry Cardinal Newman, On the Scope and Nature of University (New York, 1939), pp. 314-315.

This is not to say that the contributions of technicians are unimportant. Hierarchies of respectability have no place in the American concept of the worth and dignity of all work that is well done. It is to say that a university has the obligations to resist the inroads of training courses that do not take into account the basic function of a university.

Dental schools, like the students who come to them, are more resistant to change as each decade passes. Perhaps this is a happy circumstance, for if each college swayed to and fro like a reed in the changing winds of current educational caprice, the current graduate would be much less stable than his predecessor. But there is nothing that can lead to decadence more quickly than stagnation. Unless some presently unforeseen crusader jars us from our lethargy and the dental curriculum is broadened in the undergraduate school, the entire program of 1968 will not be startingly different from that current today. The average dentist of 1968 will only be more imbued with the crass materialism that narrows his perspective and labels him the "monetary molar mechanic" instead of "Doctor of Dental Surgery", a title which connotes and should demand that this individual be a well educated gentleman.

The dental profession is one of the noblest in the health field and requires the highest moral and intellectual values of every member. These values can be stimulated and kept alive by judiciously inserting the sound philosophical and humanities courses into an integrated six year dental curricula and not isolating them to so-called undergraduate electives. Thus, the departmentalism and isolationism typical of the dental school would be broken down, and they would become truly a part of a University.

Philosophy, logic, psychology, and the humanities are subjects that encourage and develop good habits of study, learning, and correct thinking; they make for the mental maturity so necessary for the professional man of today. Thus, the dictum of G. V. Black, the father of American Dentistry, that "the professional man has no right to be other than a continuous student",[21] will be fulfilled.

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[21] Northwestern University Dental Bulletin, (Chicago), June 1958, p. 1.

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APPROVAL SHEET

The thesis submitted by Dr. A. E. Iwersen has been read and approved by three members of the Department of Education.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

May 13, 1960
Date

John M. Wozniak
Signature of Adviser